

Notice of Allowability

Application No.

10/082,433

Examiner

Robert R. Koehler

Applicant(s)

LOPATIN ET AL.

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1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to applicants' Amendment, Remarks, and Replacement Drawing sheet filed on June 30, 2004.
2. ☒ The allowed claim(s) is/are 1-6, 8-16 and 18-20.
3. ☒ The drawings filed on 30 June 2004 and 14 March 2002 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

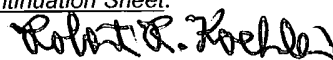
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☒ Other See Continuation Sheet.


ROBERT R. KOEHLER
PRIMARY EXAMINER
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DETAILED ACTION***Informal Examiner's Amendment***

By way of this informal Examiner's amendment, the following changes have been entered in paragraph [0001] on page 1 of the specification. All of the following changes were made by the Examiner in order to update the patent applications data. A marked-up copy of page 1 of the specification is also included with this Office action.

A. In line 4 of the paragraph, delete the wording "(S/N to be assigned);" and insert in its place

--(SN 10/081,074);-- .

B. In line 7 of the paragraph, delete the wording "(S/N to be assigned);" and insert in its place

--(SN 10/082,432; Pat. No. 6,528,424);-- .

C. In line 10 of the paragraph, delete the wording "(S/N to be assigned);" and insert in its place

--(SN 10/083,809; Pat. No. 6,660,633);-- .

D. In line 14 of the paragraph, insert the wording --Pat. No. 6,515,368;-- immediately after

"10/016,410;".

E. In lines 16 and 17 of the paragraph, delete the wording "(S/N to be assigned);" and insert in

its place --(SN 10/084,563; Pat. No. 6,717,236);-- .

F. In line 20 of the paragraph, insert the wording --(Pat. No. 6,630,741)-- between "10/016,645"

and the period (.).

Drawings

The drawings were received on June 30, 2004. These drawings are acceptable.

Allowable Subject Matter

Claims 1 to 6, 8 to 16, and 18 to 20 are allowed.

The following is an examiner's statement of reasons for allowance: The Examiner has given careful consideration to applicants' Amendment and Remarks filed on June 30, 2004, and believes that the prior art of record does not teach, suggest, or disclose applicants' amended

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claims to a method of fabricating a semiconductor device which includes the steps of *forming a copper surface directly on a semiconductor substrate and forming an electroplated copper-zinc alloy thin film on the copper surface* wherein the copper-zinc alloy thin film completely covers the copper surface. Also, the Examiner believes that the prior art of record does not teach, suggest, or disclose applicants' amended claims to a semiconductor device having a reduced-oxygen copper-zinc alloy thin film *wherein the semiconductor device comprises a semiconductor substrate having at least one copper surface formed thereon and wherein an electroplated, reduced-oxygen copper-zinc alloy thin film completely covers the at least one copper surface*. Therefore, in view of applicants' Amendment and Remarks, the Examiner withdraws the rejection of all claims under 35 U.S.C. § 102(e).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

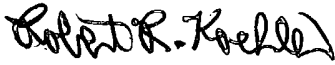
Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Robert Koehler whose telephone number is **(571) 272-1536**. The Examiner can normally be reached on Tuesday to Friday from 9:30 AM to 7:00 PM. The Examiner can also be reached on alternate Mondays.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Deborah Jones, can be reached on **(571) 272-1535**. The fax phone number for the organization where this application or proceeding is assigned is **703-872-9306**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for

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unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866-217-9197** (toll-free).



ROBERT R. KOEHLER
PRIMARY EXAMINER

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July 13, 2004